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MEMORANDUM FOR: Deputy Director for Intelligence

SUBJECT : Proposal to Contract for a "Chip" Implementation Investigation with the [redacted] 25X1 25X1

1. This memorandum requests approval to commit funds for an NPIC contract. The specific request is stated in paragraph 9.

25X1 2. [redacted] 25X1 To cope with the increased work load, it may be necessary for the Center to revise some of its existing operational procedures and techniques in order to raise the efficiency and effectiveness of our exploitation activities. Among other things, we have been examining the possibility of making greater use in the readout process of "chips," i.e., cut film of various formats. Chips have been used at NPIC in limited quantities for a number of years. They are usually small pieces of film (a few inches on the side) which have been cut from roll film; in some cases chips may consist of a total frame. Currently, chipping of roll film is essentially a manual operation. The chips are cut by hand from a work copy and then usually are stored in small individual files held by the photographic interpreter.

3. Our in-house investigations, thus far, have led us to estimate that the Center will not require the provision of chips from the film processing plants [redacted] 25X1 25X1 However, to guard against the contingency that we might not receive adequate copies of roll film, as well as to allow for greater flexibility in revising our exploitation procedures and techniques, we have developed a research project aimed at investigating alternative methods of making and handling chips. Examples of the technical parameters which must be investigated are: the advantages of optical versus direct contact printing; the storage and retrieval advantages of certain formats; the best method of digital coding and of applying mensuration reference marks; the quality of chips provided by each system; the implications of dry processed photographic materials; and the ultimate impact of different chip systems upon viewing and mensuration equipment.

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Our proposed chip implementation investigation is directed toward answering the above questions and providing various cost and technical performance "tradeoffs" related to the alternative automated approaches.

4. In addition to the Center's own potential need or desire to utilize chips on a wider basis, our responsibility for providing photographic reproduction services and advanced technology to certain other members of the National Tasking Plan also argues that we should undertake research in chips at this time. Recently we were informed through COMIREX channels that neither of the film processing plants will be able to provide chips to the community and that requirements for such will have to be satisfied by the exploiters themselves. IAS, for one, has already indicated that it would prefer to have chips rather than multiple copies of roll film. The results of our chip implementation investigation would be made available to other members of the community through the R & D subcommittee of COMIREX.

5. The proposed effort will provide the Center with a study which will set forth all the technical parameters for the implementation of an operational chip system. It will provide the required technological base and define needed equipment developments as a function of various operational contingency plans, together with the "trade-off" analysis previously mentioned. Much thought has been given by the Center to different philosophies of chip implementation. This background information will be used as a data base by the contractor. The Center will then channel and guide the contractor's investigation by defining the possible contingencies and specifically state chip requirements. This will be the responsibility of a joint NPIC task team discussed under task 1 below. In order to provide the essential data to NPIC in an orderly and efficient manner, the planned program encompasses a two-phased program--a study phase and a system design phase.

PHASE I

Task 1. Operational Familiarization--The contractor has TKH and SI clearances, but he is not intimately familiar with the Center. He will be briefed on NPIC and made familiar with the Center's operations through the media of existing data and reports and through meetings with, and queries of, management in such a manner as to disrupt the operational components as little as possible.

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At the end of Task 1, there is a "Milestone" where a task team composed of IEG, IAS, PSG, and TSSG/DED personnel will review the contractor's understanding of Center operations and provide him with direction and guidance in terms of chip requirements, operational data, chip format parameters, Center policies and procedures, along with generalized direction governing the contractor's investigations. This review will also permit the contractor to present those questions which must be answered in order to perform a meaningful study.

Task 2. Equipment Survey and Evaluation--The contractor will review all applicable existing and proposed chip systems; he will combine this information with his own knowledge in order to predict the technical state-of-the-art and then perform necessary testing and evaluation of significant limiting elements of the systems being considered.

Task 3. Development of Weighting Factors--The contractor, in conjunction with NPIC personnel, will relate equipment considerations to operational factors to determine a system of relevant weighting factors for use in analyzing practical alternatives and for use in recommending options.

Task 4. Documentation and Recommendations--This task will provide a report containing information on three or four alternative system approaches, setting forth the technical risks involved in each, the complexity and trade-offs inherent in the various options, and showing the advantages and/or disadvantages of each system.

At the end of Phase I, a team of NPIC personnel will review the alternate system approaches presented and choose one or two of the most promising for detailed analysis under Phase II.

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PHASE II

Task 5. This task consists of a final technical report containing detailed technical and cost breakdown covering the chosen alternatives. Detailed equipment specifications and over-all configuration and implementation plans will be provided.

This research program should provide the Center with sufficient technical and cost data to permit logical planning and decisions regarding the judicious selection of a viable contingency plan for an operational chip system in the event it becomes necessary to implement such a system. The program will require 11 months to complete of which Phase I and Phase II will be seven and three months, respectively. Also included is a month decision period between phases.

6. Proposals were requested from a total of six companies having the proper technical capability and the necessary system clearances. The five responses were evaluated by a technical team composed of four Development & Engineering Division personnel. [redacted] proposal was chosen because of the company's demonstrated knowledge of contemporary chip systems and upon its superior technical approach. Cost factors were also considered, with special emphasis placed on a favorable ratio of contractor man hours expended per KPIC dollar invested. 25X1

7. Upon successful completion of the contract, KPIC will be provided with one or more detailed design plans along with the equipment specifications necessary to implement an efficient operational chip system. If KPIC decides to implement one of these contingency plans, research and development of the essential component equipment would naturally follow with projected costs, over a several-year period, ranging from [redacted] dependant upon the degree of over-all automation chosen. This cost and time estimate could also vary as a function of the pending near Real-Time System requirements since the research performed in this project is applicable to the expected operational procedures of this system. Before launching an equipment development program, however, we could carefully review the potential impact of near real-time on the Center in order to gain the greatest benefit from any automated chip program we may choose to implement. 25X1

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9. It is requested that negotiations with [redacted] for a contract to conduct the program described, at a cost not to exceed [redacted] be approved.

ARTHUR C. LUNDAHL
Director
National Photographic Interpretation Center

Attachments:
1. [redacted] Proposal (69 AN 31), 14 May 1969
2. [redacted] Revised Proposal (69 AN 52), 13 June 1969

APPROVED: [redacted] ______________________ Date
Deputy Director for Intelligence

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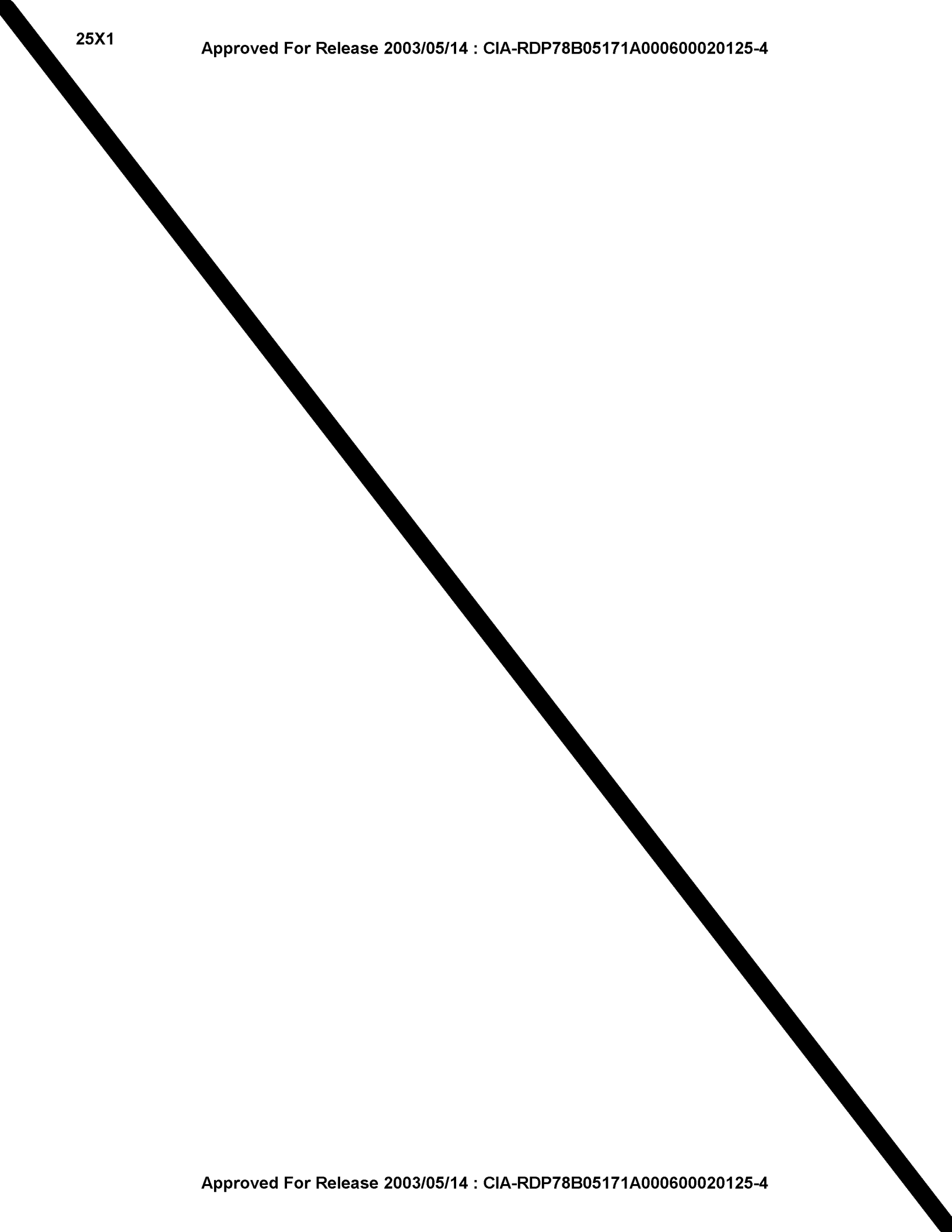

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